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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,509	01/25/2001	Fumiaki Katagiri	NADII.018A	5860

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EXAMINER

LAMBERTSON, DAVID A

ART UNIT	PAPER NUMBER
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1636

DATE MAILED: 03/26/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/770,509

Applicant(s)

KATAGIRI, FUMIAKI

Examiner

David A Lambertson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-51 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1, 2, 6, 9, 10, 12, 13, 17, 20 and 21, drawn to a method for identifying antimicrobial compounds that bind to or inhibit FtsZ-mt1 (SEQ ID NO: 1 (polynucleotide)/SEQ ID NO: 2 (encoded protein)), classified in class 435, subclass 6.
- II. Claim 1, 3-5, 7-10, 12, 14-16 and 18-21, drawn to a method for identifying antimicrobial compounds that bind to or inhibit FtsZ-mt2 (SEQ ID NO: 3/5/9 (polynucleotide)/SEQ ID NO: 4/10 (encoded protein)), classified in class 435, subclass 6.
- III. Claim 11 and 22, drawn to a compound that binds to or inhibits an FtsZ-mt protein, classified in class 514, subclass 1.
- IV. Claims 23 and 47, drawn to a method of suppressing growth using an antimicrobial agent that inhibits an FtsZ-mt protein, classified in class 435, subclass 7.2.
- V. Claims 24-29, drawn to a method of crop improvement using an antimicrobial agent that binds to or inhibits FtsZ-mt1 (SEQ ID NO: 1 (polynucleotide)/SEQ ID NO: 2 (encoded protein)), classified in class 424, subclass 405.
- VI. Claims 24-29, drawn to a method of crop improvement using an antimicrobial agent that binds to or inhibits FtsZ-mt2 (SEQ ID NO: 3/5/9 (polynucleotide)/SEQ ID NO: 4/10 (encoded protein)), classified in class 424, subclass 405.

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- VII. Claims 30-35, drawn to an isolated nucleic acid that encodes an FtsZ-mt protein, classified in class 536, subclass 23.1.
- VIII. Claim 36, drawn to an isolated FtsZ-mt protein, classified in class 530, subclass 300.
- IX. Claims 37 and 38, drawn to a method of making an FtsZ-mt protein, classified in class 435, subclass 69.1.
- X. Claims 39-45, drawn to a method of "virtually" identifying a compound that inhibits FtsZ-mt proteins but not FtsZ-cp proteins, classified in class 435, subclass 6.
- XI. Claim 46, drawn to an inhibitor of FtsZ-mt proteins but not FtsZ-cp proteins, classified in class 514, subclass 1.
- XII. Claims 48-51, drawn to a method of treating fish with an antimicrobial agent that binds to or inhibits FtsZ-mt1 (SEQ ID NO: 1 (polynucleotide)/SEQ ID NO: 2 (encoded protein)), classified in class 119, subclass 200.
- XIII. Claims 48-51, drawn to a method of treating fish with an antimicrobial agent that binds to or inhibits FtsZ-mt2 (SEQ ID NO: 3/5/9 (polynucleotide)/SEQ ID NO: 4/10 (encoded protein)), classified in class 119, subclass 200.

Concerning Groups IV and VII-X they are claimed in a Markush type format; however the members of the group do not possess unity of invention and instead are patentably distinct inventions recited in the alternative. For clarity purposes, the members of the groups are set forth as follows: upon election of Groups IV, VII and IX, applicant must select either SEQ ID

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NO: 1 or SEQ ID NOS: 3/5/9; upon election of Groups VIII and X, applicant must select either SEQ ID NO: 2 or SEQ ID NOS: 4/10. The members of the group are different and patentably distinct from each other because each member is a different biological molecule (either a polynucleotide encoding distinct proteins or the respective encoded proteins), therefore there is no functional relationship between the members of the group (See MPEP 803.02). Upon election of any Group that contains any of the aforementioned claims, Applicant is required to elect one of the members of the group set forth in the claim. This is not an election of species.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different effects and are not disclosed as capable of being used together. The method of I is directed to identifying a compound that binds to or inhibits FtsZ-mt1 whereas the method of II is directed to the identification of a compound that binds to or inhibits FtsZ-mt2. The methods are directed to different outcomes (binding/inhibition of one protein versus another), therefore the methods have different effects thus they are patentably distinct.

Inventions I-II and invention III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions and are not disclosed as capable of

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being used together. The methods of Groups I-II merely identify a property of the compound of Group III and do not impart some functional or structural characteristic on the compound that it does not already possess. The methods of Groups I-II are not required to produce the compound of Group III, therefore the inventions have different functions and are patentably distinct.

Inventions I-III and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different effects and are not disclosed as capable of being used together. Specifically, the methods and compounds of Group I-II involve the identification of compounds that bind to or inhibit either FtsZ-mt1 or FtsZ-mt2, whereas Group IV is directed towards a method for suppressing the growth of an oomycete. The different effects in each case are the identification of a compound versus the suppression of an organism's growth, as there is no specific identification step required for the method of IV. Similarly, the compounds (III) identified by the methods of Groups I-II would not be related to method of Group IV as the method of Group IV is not drawn to identifying such a compound. As a result, the inventions are patentably distinct because each invention has a different effect.

Inventions V and VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different effects and are not disclosed as capable of being used together. The methods of V is directed to the improvement of crops using a compound that binds to or inhibits

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FtsZ-mt1, while the method of VI is directed to the improvement of crops using a compound that binds to or inhibits FtsZ-mt2. The methods have different outcomes (binding/inhibiting one protein versus another in a method for improving crops), therefore the methods have different modes of operation thus they are patentably distinct.

Inventions I-IV and inventions V-VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different effects and are not disclosed as capable of being used together. Methods for identifying compounds that bind to or inhibit FtsX-mt proteins (I-II) and a method for suppressing the growth of an organism (IV) have different outcomes from the improvement of crops (VIII-XI). Furthermore, the compound identified by the methods of Groups I-II would not be related to methods of Groups V-VI as the methods of Group V-VI are not drawn to identifying such a compound. Therefore the inventions have different effects and are patentably distinct.

Inventions XII and XIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation and are not disclosed as capable of being used together. The method of Group XII is directed to the treatment of fish using a compound that binds to or inhibits FtsZ-mt1 while the method of Group XIII is directed to the treatment of fish using a compound that binds to or inhibits FtsZ-mt2. The methods comprise different steps

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(binding one protein versus another in a method for treating fish), therefore the methods have different modes of operation thus they are patentably distinct.

. Inventions I-VI and XII-XIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different effects and are not disclosed as capable of being used together. Methods for identifying compounds that bind to or inhibit FtsZ-mt1 or FtsZ-mt2 (I-II), methods for suppressing the growth of an organism (IV), and methods for the improvement of crops (V-VI) have different outcomes than the treatment of fish (XII-XIII). Furthermore, the compound identified by the methods of Groups I-II would not be related to methods of Groups XII-XIII as the methods of Group XII-XIII are not drawn to identifying such a compound. AS such, the inventions have different effects and are patentably distinct.

Inventions X and XI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions and are not disclosed as capable of being used together. The method of Group X merely identifies a property of the compound of Group XI and do not impart some functional or structural characteristic on the compound that it does not already possess. The method of Group X is not required to produce the compound of Group XI, therefore the inventions have different functions and are patentably distinct.



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Inventions I-II, IV-VI and XII-XIII are unrelated to invention X. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation and are not disclosed as capable of being used together. The methods of I-II, IV-VI and XII-XIII do not involve the prediction of three-dimensional structures, a method step required for X. Therefore, the inventions have different modes of operation and are therefore patentably distinct.

Inventions III and XI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions and are not disclosed as capable of being used together. Specifically, the compound of Group XI cannot inhibit FtsZ-cp, which is not a property of the compound of Group III. As a result of these different functions, the inventions are patentably distinct.

Inventions VII and VIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions and are not disclosed as capable of being used together. A nucleic acid (VII) is a chemically distinct molecule from a protein (VIII), with each having different chemical components and therefore, different structures and functions. Therefore the inventions are patentably distinct.

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Inventions VII and IX are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the nucleic acids can be used as probes to identify homologous proteins in different organisms.

Inventions VIII and IX are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process, such as solid-state synthesis or by non-recombinant production means (e.g., isolation from a native source of the protein).

Inventions VII-VIII and I-II, IV-VI, X and XII-XIII are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the products can be used in a materially different process, such as the generation of antibodies or as probes to identify homologous nucleic acids.

Inventions III and XI and inventions VII-VIII are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different

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modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01).

In the instant case the different inventions have different functions and are not disclosed as capable of being used together. Specifically, there is no structure-function relationship between a polynucleotide (VII) or a polypeptide (VIII) and compounds that are designed to inhibit the function of the encoded polypeptide. Therefore the inventions are considered to be patentably distinct.

Inventions I-II, IV-VI, X and XII-XIII are unrelated to IX. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different effects and are not disclosed as capable of being used together. The outcomes of I-II, and X (the identification of a compound), IV (the suppression of an organism's growth), V-VI (the improvement of crops) and XII-XIII (the treatment of fish) are different than the production of a protein (IX), therefore the inventions are patentably distinct.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper. Furthermore, especially in instances where the classifications are the same, the non-patent literature searches required for each of these inventions are not co-extensive, hence said searches would be burdensome. Therefore restriction for examination purposes as indicated is proper.

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Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Lambertson whose telephone number is (703) 308-8365. The examiner can normally be reached on 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel, Ph.D. can be reached on (703) 305-1998. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

David A. Lambertson  
March 16, 2003

*Gerald G. Letters Jr.*  
**PATENT EXAMINER**  
*Gerald G. Letters Jr.*  
*A.U. 1636*